

CLAIMS

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1. A printhead having a circuit with plural resistors and a power bus, comprising:
a metal stack formed within the circuit and comprised of a first metal layer and a second metal layer; and
at least one power via formed within the circuit as an interface between the first metal layer and the second metal layer and as a separation barrier between the resistors and the power bus.

2. The ink jet printhead of claim 1, further comprising a controller bus that is connected to controller vias that are connected to the resistors.

3. The ink jet printhead of claim 1, wherein the circuit is a thin film circuit and the first metal layer is comprised of Aluminum Copper Silicon.

4. The ink jet printhead of claim 1, wherein the second metal layer is comprised of Aluminum and Tantalum Aluminum.

5. The ink jet printhead of claim 4, wherein a first portion of the Tantalum Aluminum is the resistor and a second portion connects the resistor to the power bus.

6. The ink jet printhead of claim 1, wherein ink corrosion is terminated at the power via.

7. The ink jet printhead of claim 1, wherein for a set of resistors, power is routed from the power bus through the power vias to each resistor.

8. The ink jet printhead of claim 2, wherein for a set of resistors, power is routed from the resistors to the controller vias.

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9. The ink jet printhead of claim 1, wherein each resistor is associated with at least one power via that separates metal of the resistor from the power bus.

5 *Sub A* 10. In an ink jet printhead, a method for increasing resistance to ink corrosion of a thin film circuit, comprising:

separating a thin film resistor from a power bus in the thin film circuit; and

protecting the power bus from ink exposure.

10 11. The method of claim 10, wherein the power bus is separated with at least one power via.

15 *Sub B3* 12. The method of claim 11, further comprising forming the power via within the circuit as a separation barrier between the resistors and the power bus.

20 13. The method of claim 10, further comprising routing power from the resistors to the controller vias.

25 14. The method of claim 10, wherein protecting the power bus from ink exposure includes terminating ink penetration at the power via.

30 15. The method of claim 10, further comprising providing a metal stack made of a first metal layer and a second metal layer, forming an interface between the first metal layer and the second metal layer, and creating a separation barrier between the conductive portions of the thin film resistors and the power bus.

35 16. The method of claim 15, wherein the first metal layer is comprised of Aluminum Copper Silicon, the second metal layer is comprised

of Aluminum and at least one of Tantalum Aluminum, Tungsten Silicon Nitride, or Tantalum Nitride which provides corrosion resistance and connects the Aluminum to the power bus.

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- 5 17. A method of manufacturing a circuit for an ink jet printhead, the circuit having plural resistors, a power bus and a controller bus, the method comprising:
- 10 routing a conductive route from the power bus to power vias associated with each resistor and to each resistor and from the controller bus to controller vias associated with each resistor and to each resistor; and protecting the power bus from ink penetration with the power vias for increasing resistance to corrosion.

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- 15 18. The method of claim 17, wherein providing a conductive routing scheme includes producing power vias that are defined by a conductive metal and a non-corrosive metal of the resistor.

- 20 19. The method of claim 17, wherein protecting the power bus with the power vias includes separating a metal portion of the resistor from the power bus.

- 25 20. The method of claim 17, wherein the circuit is a thin film circuit and includes a metal stack comprised of a first metal layer and a second metal layer, wherein the second metal layer is conformed with the vias that form an interface between the first metal layer and the second metal layer and wherein at least one via forms a separation barrier between the conductive portions of the thin film resistors and the power bus.